Extron® Electronics
INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

MPA 122
Mini Power Amplifier

68-943-01 **Rev. A**
11 04

Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:

Extron Electronics, Japan
Daisan DMJ Bldg. 6F,
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.
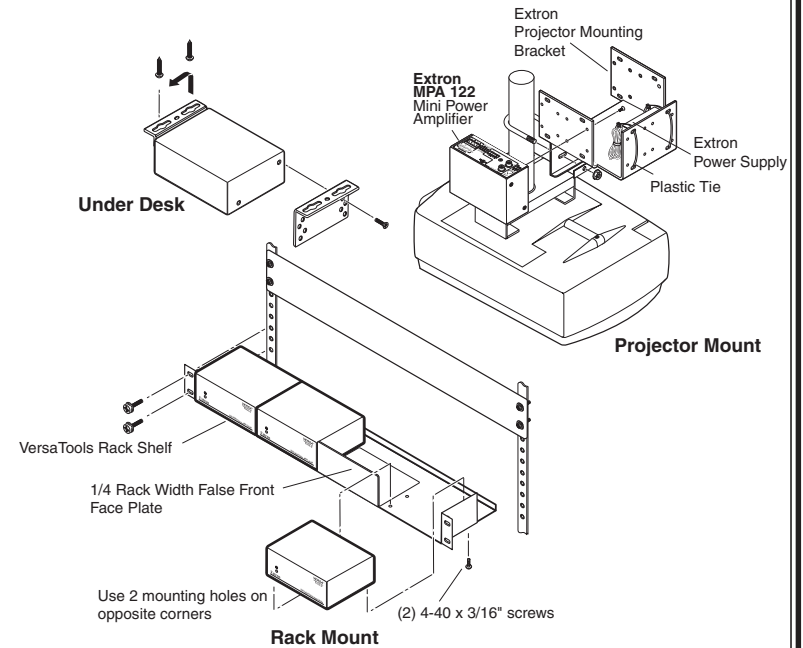
Quick Start Guide — MPA 122

To install and set up an MPA 122 Mini Power Amplifier, follow these steps:

Step 1

Turn all of the equipment off and disconnect it from the power source.

Step 2

Mount the MPA 122 on a rack, under a desk, or on a projector, as illustrated below.

Step 3

Attach the speakers to the MPA 122.

Step 4

Attach inputs to the MPA 122 unit and the audio source and/or projector. Ensure that the projector's audio output is set to **variable out**. Multiple input options (RCA, 3.5 mm stereo input, or captive screw) can be used simultaneously; this will result in audio mixing.

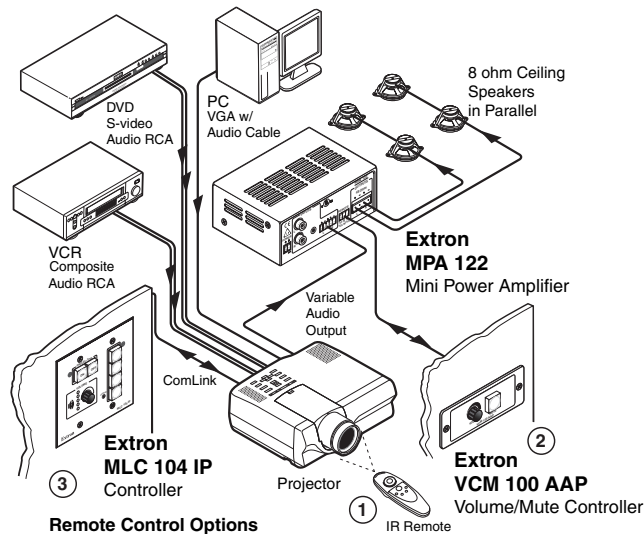NOTE *See* Inputs *in chapter 2 for more information on these audio connections.*

Step 5

Connect power cords to MPA 122 and other audio equipment.

Quick Start Guide — MPA 122, cont'd

Step 6
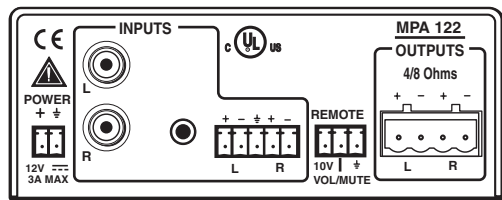
Adjust the MPA 122 input level, bass and treble.

a. If connecting to a projector, ensure that the volume on the device is at its lowest point, then adjust the **level** of the MPA 122 fully counterclockwise.

LEVEL   BASS   TREBLE

MPA 122
MINI POWER AMPLIFIER

b. Set the projector volume to its maximum volume level (no sound should come out).

c. Return to the MPA 122 and raise the level until sound distortion occurs, then lower slightly until distortion disappears. This setting ensures that, whatever the projector volume setting may be, no clipping occurs.

d. Adjust bass and treble to preference.

8 ohm Ceiling Speakers in Parallel

PC VGA w/ Audio Cable

DVD S-video Audio RCA

VCR Composite Audio RCA

Extron MPA 122 Mini Power Amplifier

Variable Audio Output

ComLink

Extron MLC 104 IP Controller

Projector

IR Remote

Extron VCM 100 AAP Volume/Mute Controller

Remote Control Options

1 IR Remote - (input selection and volume control through projector)

2 VCM 100 Volume/Mute Controller - (direct MPA 122 control)

3 MLC 104 IP Controller - (input selection and volume control through projector)

Typical connection setup

INPUTS   MPA 122   OUTPUTS 4/8 Ohms

POWER

12V 3A MAX   REMOTE   10V VOL/MUTE

The Extron MPA 122 mini power amplifier

Table of Contents

All trademarks mentioned in this manual are the properties of their respective owners.

MPA 122

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Chapter One

Introduction

About this Manual

About the MPA 122

Features

Introduction

About this Manual

This manual contains information about the Extron MPA 122 Mini Power Amplifier with instructions on how to mount and operate the unit.

About the MPA 122

The Extron MPA 122 Mini Power Amplifier provides 2-channel power amplification for speaker systems in applications requiring compact, economical audio solutions. The MPA 122 delivers 11 watts (rms) per channel into 4 ohms and 7 watts (rms) into 8 ohms. It is optimized for driving four 8 ohm ceiling speakers, two in parallel, per channel.

The MPA 122 accepts balanced and unbalanced stereo inputs, and provides outputs as stereo or dual mono audio signals. Front panel controls are provided for input level, bass, and treble. The front panel also features switches for stereo/dual mono operation and a limiter switch which automatically reduces the gain to prevent distortion (amplifier clipping). The MPA 122 features remote control capability for volume adjustment and muting. As part of the VersaTools® line, the MPA 122 can be housed in a 1U, quarter rack width metal enclosure, mounted under a desk, or mounted on a projector.

Features

Digital audio amplifier — The MPA 122 features improved, class D technology for high efficiency and low distortion.

Compact size — The MPA 122 is housed in a 1U high, 1/4 rack width, 3" deep, metal enclosure, making this amplifier a powerful product for many unique applications.

Balanced and unbalanced audio inputs — Balanced or unbalanced stereo input is on a captive screw connector. The MPA 122 also includes RCA connectors and a 3.5 mm stereo mini jack for unbalanced input.

Quick plug speaker outputs — Speaker output is on a captive screw connector for quick installation.

Front panel controls — Input level, bass, and treble can be easily adjusted from the front panel.

Limiter switch — The limiter switch prevents output distortion (clipping) and potential damage to speakers.

Stereo/dual mono switch — Fits applications for both stereo program speakers or mono ceiling speakers.

Volume and mute remote control — The MPA 122 can be remotely controlled for volume adjustment and muting via connectivity to a rear panel, captive screw "Remote" input connector.

Flexible mounting options — The MPA 122 can be mounted on a rack, projector, or under furniture.

External international power supply — The autoswitchable, 12 VDC, 3 A external power supply provides worldwide power compatibility (part #70-380-01).

2

Chapter Two

Installation and Operation

Installation and Operation

Installation Overview

To install and set up an MPA 122, follow these steps:

1 Turn all of the equipment off. Make sure that the input devices (DVD, VCR, PC, etc.), the MPA 122 unit, and the output devices are turned off and disconnected from their power source(s).

2 Mount the MPA 122 unit. See *Mounting the MPA 122* below.

3 Attach the speakers and/or other output devices to the MPA 122. See *Rear Panel Features* later in this chapter for more information.

4 Attach inputs to the MPA 122. See *Inputs* later in this chapter for more information.

5 Connect power cords to the MPA 122 and other devices.

6 Adjust MPA 122 input level, bass and treble. See *Setting up the MPA Amplifier* later in this chapter for detailed information.

Mounting the MPA 122

There are many optional accessories for mounting the MPA 122. They include the following:

- VersaTools® multi-product projector mounting kit

  (part #70-374-01)

- 1U universal VersaTools rack shelf   (part #60-190-20)

- 1U basic VersaTools rack shelf   (part #60-604-20)

- 1U universal rack shelf   (part #60-190-01)

- 1U 6" deep universal rack shelf kit   (part #60-190-10)

- 1U basic rack shelf   (part #60-604-01)

- 1U 6" deep basic rack shelf   (part #60-604-10)

- Mini under-desk mounting bracket kit

  (part #70-212-01)

Following are detailed instructions on rack mounting, under-desk mounting, and projector mounting the MPA 122 unit (for use in classrooms, personal offices, meeting rooms, etc.).

Rack mounting

1. If feet were previously installed on the bottom of the MPA 122 unit, remove them.

2. Mount the unit on the rack shelf, using two 4-40 x 3/16" screws in opposite (diagonal) corners to secure the MPA to the shelf.

3. Install blank panel(s) or other unit(s) to the rack shelf.

4. Insert the shelf into the rack, aligning the holes in the shelf with those in the rack.

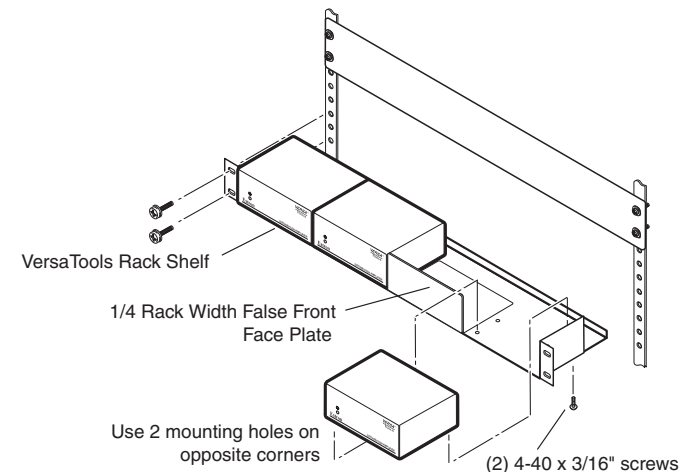**5.** Secure the shelf to the rack using the supplied machine screws.

VersaTools Rack Shelf

1/4 Rack Width False Front Face Plate

Use 2 mounting holes on opposite corners

(2) 4-40 x 3/16" screws

Figure 2-1 — Mounting the MPA 122 on the VersaTools® shelf

NOTE *Only products in the VersaTools® or IP Link lines can be mounted to a VersaTools shelf.*
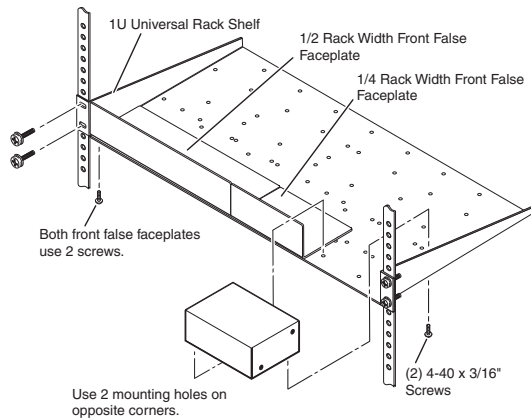
Installation and operation, cont'd

Figure 2-2 — Mounting the MPA 122 on the standard shelf

Under-desk mounting

In addition to using the MPA 122 unit on a rack or projector, it can also be mounted under furniture (or under a desk). Mount the unit by using the optional mounting kit (Extron part #70-212-01) for furniture, as follows:

1. Attach the mounting brackets to the amplifier with the machine screws provided (figure 2-3).

2. If feet were previously installed on the bottom of the interface, remove them.

3. Hold the amplifier with the attached brackets against the underside of the table or other furniture. Mark the location of the screw holes of the bracket on the mounting surface.

4. Drill 3/32" (2 mm) diameter pilot holes, 1/4" (6.3 mm) deep in the mounting surface at the marked screw locations.

5. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until just less than 1/4" of the screw head protrudes.

6. Align the mounting screws with the slots in the brackets and place the interface against the surface, with the screws through the bracket slots.

7. Slide the unit slightly forward or back, then tighten all four screws to secure it in place.
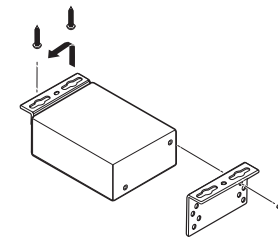
Figure 2-3 — Under-desk mounting

Projector mounting

In addition to mounting the MPA 122 unit to a rack or under furniture, it can also be projector mounted using the optional VersaTools® multi-product projector mounting kit (part #70-374-01).

NOTE *Only VersaTools products and most IP Link products can be mounted using the multi-product projector mounting kit.*

To projector mount the MPA 122, do the following:

1. If necessary, remove the feet from the bottom of the device to be installed.

2. Mount the MPA 122 to one of the bracket's three mounting plates. The device can be vertically mounted facing either up or down, whichever is most convenient. See the illustration below.

    Use two supplied 4-40 x 3/16 screws in opposite (diagonal) corners to secure the device to the bracket.
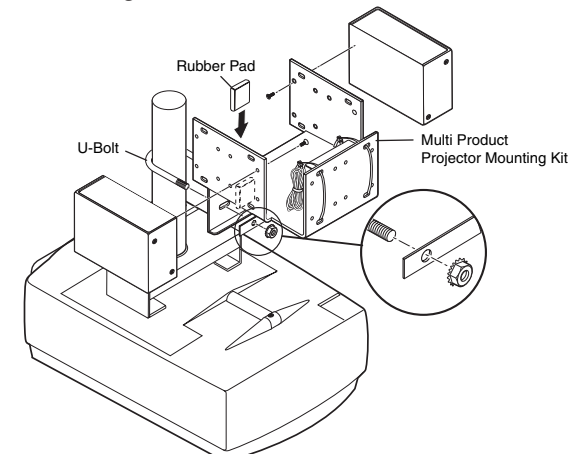

Figure 2-4 — Projector mounting for the MPA 122

Installation and operation, cont'd

NOTE *On the side mounting plates, devices are typically mounted on the outside of the bracket. On the front mounting plate, devices are typically mounted on the inside of the bracket.*

NOTE *The front mounting plate is 1/4" taller than the side plates. This size helps ensure the accessibility of buttons or connectors.*

3. Affix the black rubber pad to the mounting plate.

4. Place the U-bolt around the ceiling pole and insert the two legs of the U-bolt through the slotted holes on the bracket's mounting plate and then through the slotted holes on the backing brace.

   For a typical (1.5" to 2.0" diameter) pole — The supplied U-bolt fits a typical ceiling pole.

   For a smaller or larger pole — Locally obtain a U-bolt that fits the ceiling pole. The slotted holes on the bracket will accommodate a U-bolt for pole sizes from 1.0" to 2.5" in diameter.

5. Secure the bracket to the U-bolt with the included hex nuts, washers, and lock washers.
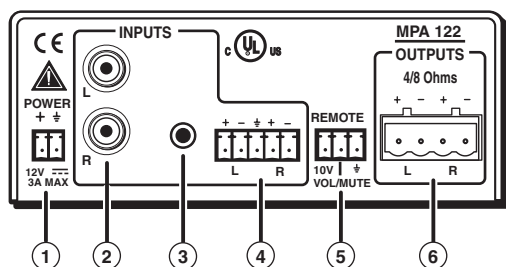
Rear Panel Features

Figure 2-5 — MPA 122 back panel

Power input

① **Power connection —** Plug the external 12 VDC power supply into this connector. The power supply is included with the unit.

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

CAUTION *When connecting the power supply, voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the interface. Identify the power cord negative lead by the ridges on the side of the cord.*
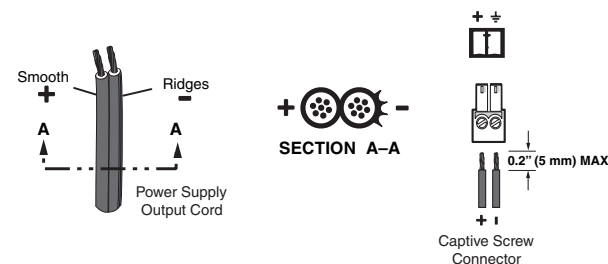

Figure 2-6 — Power connector wiring

NOTE *Do not tin the stripped power supply leads before installing the captive screw connector. Tinned wires are not as secure in the captive screw connectors and could pull out.*

WARNING *The two power cord wires must be kept separate while the power supply is plugged in. Remove power before continuing.*

Audio inputs

There are three choices of input connectors (RCA, 3.5 mm stereo, and captive screw) available on the rear panel for adapter-free connections.

Connecting more than one input signal at one time will result in audio mixing.

② **RCA input connector —** Plug an RCA audio source to this line level input.

③ **3.5 mm stereo input —** Plug a 3.5 mm audio micro cable into this stereo jack.

Installation and operation, cont'd

④ Balanced or unbalanced audio input connector — Marked "L" and "R", this 3.5 mm captive screw input is for bare wire, balanced or unbalanced audio signals.
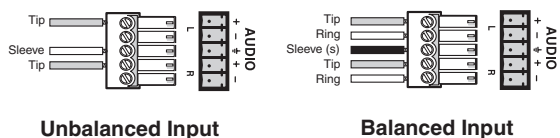

Unbalanced Input   **Balanced Input**

Figure 2-7 — 3.5 mm captive screw audio input connector wiring

Remote control

⑤ Remote input connector — An optional 3-pin captive screw connector that allows a wall mounted audio controller or MediaLink product to remotely control volume and mute levels for the MPA 122 unit.

For more information on using the remote input connector, see Chapter 3, *Remote Operation*.

Audio output

⑥ Speaker connector — Marked "L" and "R", this 4-pin, 5 mm captive screw connector is used to connect the amplifier to the speakers.

⚠️ *The recommended MPA 122 output set-up includes 4 ceiling speakers of 8 ohm impedance, (2 sets in parallel with each other), so that each output drives a maximum of 4 ohm loads.*

WARNING *Do not tie both L and R outputs to each other and/ or to input ground. Doing so will short out the outputs and damage the amplifier.*
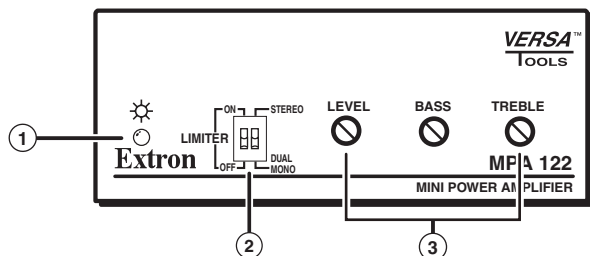
Front Panel Features

Figure 2-8 — MPA 122 front panel

① Power LED — A green LED lights to indicate that the unit is receiving power.

② DIP switches — This 2-bank DIP switch controls the limiter (on and off) on one side, and allows for setting the Stereo and Dual Mono modes on the other.

1 — Limiter — When the limiter is switched to on, the MPA will automatically reduce the level to prevent the amplifier from clipping.

2 — Stereo/Dual Mono:

Stereo mode — In stereo mode, the audio signal input from each channel will be output to the speakers respectively.

Dual Mono mode — In dual mono mode, the inputs from channels L and R will be summed together and output to the speakers as two mono channels. In essence, output L and R contain the same combined signal information.

③ Potentiometer adjustments — These three potentiometers optimize level, bass, and treble adjustments.

Setting Up the MPA 122 Amplifier

The following steps ensure optimal sound by adjusting the projector volume to match the level, bass, and treble of the MPA 122 amplifier.

When setting up volume control, ensure that the projector output is set to **variable out**. Consult the projector's user manual for detailed instructions on its calibration.

To adjust the MPA 122 input level, bass, and treble, do the following:

1. If connecting to a projector, ensure that the volume on the device is at its lowest point, then adjust the level of the MPA 122 fully counterclockwise.

2. Set the projector volume to its maximum volume level. No sound should come out.

3. Return to the MPA and raise the level until sound distortion occurs, then lower the level slightly until any distortion disappears. This setting ensures that, whatever the projector volume setting may be, no clipping occurs.

4. Adjust bass and treble to preference.

Installation and operation, cont'd

Remote connector wiring

As shown below, **Pin 1** is 10 VDC reference voltage. **Pin 2** is volume control DC voltage; range is 0 to 10 V, where 0 V is mute and 10 V provides maximum volume. **Pin 3** is ground.

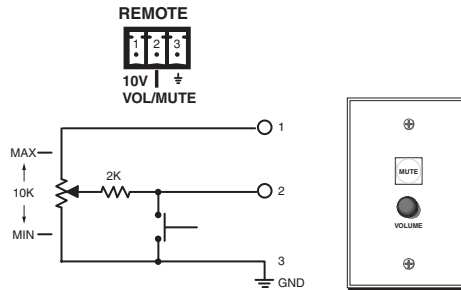**NOTE** *All nominal levels are at ±10%*

Figure 2-9 — Pinout diagram for optional remote connector

See Chapter 3, *Remote Operation* for more information on the three options (IR remote, MLC series, or DC volume/mute controller) for remote control.
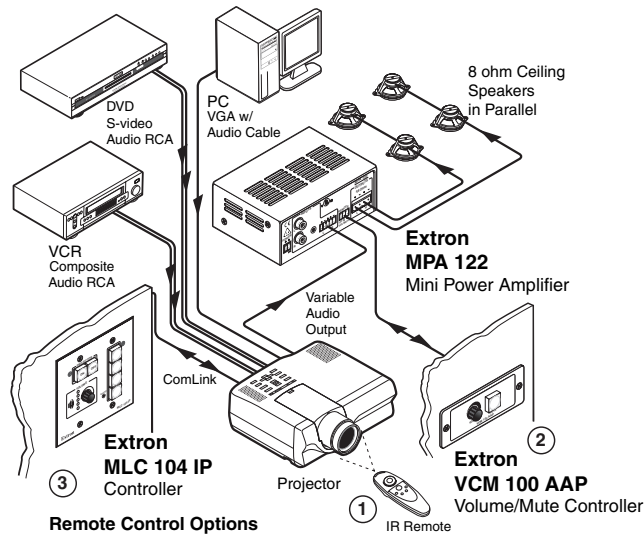
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Chapter Three

Remote Operation

Remote Control Options

Remote Control Options

Remote Control Options

① IR Remote - (input selection and volume control through projector)

② VCM 100 Volume/Mute Controller - (direct MPA 122 control)

③ MLC 104 IP Controller - (input selection and volume control through projector)

Figure 3-1 — Three remote control options

① **Using the projector's IR remote** — For a projector with variable audio outputs, use the projector's IR remote to control the projector's volume, which effectively controls the MPA's volume.

② **Extron VCM 100 or mute controller** — For a projector without variable audio outputs, or for a system designed to control MPA volume directly, use a 10k ohm potentiometer to control the MPA directly via the remote port on the MPA.

③ **Using a MediaLink™ Controller** — For a projector with variable audio output, use a MediaLink controller to control the projector's volume via RS-232 or the projector's IR remote to effectively control the MPA volume.

MPA 122

Appendix A

Specifications, Part Numbers, and Accessories

Specifications

Included Parts

Optional Accessories

Specifications, Part Numbers, and Accessories

Audio

Frequency response .... 20 Hz to 20 kHz, ±1 dB @ 1 watt output

THD + Noise .... 0.15% @ 1 kHz at nominal level (1 watt, 8 ohm load)

S/N .... >72 dB @ 20 Hz to 20 kHz at maximum output (unweighted)

Stereo channel separation .... >55 dB @ 1 kHz, >45 dB @ 20 kHz

CMRR .... >80 dB @ 1 kHz, >70 dB @ 20 kHz

Bass adjustment .... ±10 dB @ 80 Hz (reference) to 1 kHz (2 dB tolerance)

Treble adjustment .... ±10 dB @ 10 kHz (reference) to 1 kHz (2 dB tolerance)

Audio input

Number/signal type .... 1 stereo, balanced/unbalanced input
2 stereo, unbalanced inputs
(The three inputs are individually buffered and mixed together.)

Connectors .... (1) 3.5 mm captive screw connector, 5 pole (main input)
(1) 3.5 mm mini audio jack (tip, ring, sleeve)
1 pair RCA

Impedance .... >18k ohms unbalanced, >24k ohms balanced, DC coupled

Nominal level .... +4 dBu (1.23 Vrms) balanced or -10 dBV (316 mVrms) unbalanced

Maximum level

    Level pot. at 12 o'clock .... +6 dBV (unbalanced), +16 dBu (balanced) at 1% THD+N

    Level pot. at 9 o'clock ...... +16 dBV (unbalanced), +23 dBu (balanced) at 1% THD+N

Input level sensitivity .... -10 dBV (316 mV) from unbalanced input for maximum output (11 watts with a 4 ohm load and level set to maximum) before clipping

NOTE *0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu*

Audio output

Number/signal type .... 1 stereo or 2 mono (2 channels total)

Connectors .... (1) 5 mm captive screw connector, 4 pole

Minimum load impedance .... 4 ohms

Amplifier type .... Improved Class D

Continuous power with a full load and 1% THD

    At 4 ohms .... 11 watts (rms) per channel

    At 8 ohms .... 7 watts (rms) per channel

Damping factor .... >30 (with a 4 ohm load)

Control/remote — amplifier

Control port .... (1) 3.5 mm captive screw connector, 3 pole

Pin configuration .... Pin 1 = 10 V, pin 2 = variable voltage or mute, pin 3 = GND

General

External power supply .... 100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable; to 12 VDC, 3 A (max.), regulated

Power input requirements .... 12 VDC, up to 3 A

Temperature/humidity .... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing

Rack mount .... Yes, with optional 1U rack shelf, part #60-190-01 or 60-604-01; or VersaTools® rack shelf, part #60-190-20 or 60-604-20. Above-projector mountable with optional Multi-Product Projector Mounting Kit #70-374-01. Also furniture mountable with optional Mini Under-Desk Mounting Kit, #70-212-01.

Enclosure type .... Metal

Enclosure dimensions .... 1.7" H x 4.3" W x 3.0" D (1U high, quarter rack wide)
4.3 cm H x 10.9 cm W x 7.6 cm D
(Depth excludes connectors.)

Product weight .... 0.6 lbs (0.3 kg)

Shipping weight .... 3 lbs (2 kg)

Vibration .... ISTA 1A in carton (International Safe Transit Association)

Specifications, Part Numbers, and Accessories

Listings .... UL, CUL
Compliances .... CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF .... 30,000 hours
Warranty .... 3 years parts and labor

NOTE *All nominal levels are at ±10%*

NOTE *Specifications are subject to change without notice.*

Included Parts

These items are included in each order of a MPA 122 unit:

Included parts	Part number
MPA 122 Mini Power Amplifier	60-668-01
12 VDC, 3 A external power supply	70-380-01
Female, 3.5 mm, 5-pole captive screw conn.	10-319-10
Female, 3.5 mm, 3-pole captive screw conn.	10-319-03
MPA 122 Mini Power Amplifier User's Manual	
4-pin, 5 mm terminal block plug	10-163-14
Black rubber pad	
IEC power cord	
Industrial strength Velcro®	

Optional Accessories

Accessories	Part number
VersaTools® multi-product projector mounting kit	
	70-374-01
1U universal VersaTools rack shelf	60-190-20
1U basic VersaTools rack shelf	60-604-20
1U universal rack shelf	60-190-01
1U 6" deep universal rack shelf kit	60-190-10
1U basic rack shelf	60-604-01
1U 6" deep basic rack shelf	60-604-10
Mini under-desk mounting bracket kit	70-212-01

Specifications, Part Numbers, Accessories, cont'd